

# COST *and* MANAGEMENT

VOL. XXIV

SEPTEMBER

No. 8

## FOOD COST CONTROL

By Henry W. Espersen ..... 260

## WHY INDUSTRIAL ENGINEERS DO NOT REACH TOP MANAGEMENT

By Bruce Wallace ..... 272

## REGULAR DEPARTMENTS

Society Notes ..... 250

New Members ..... 253

Current Literature Digest ..... 254

C. and M. Round-up ..... 258

Student Section ..... 280

Published Monthly by the  
SOCIETY OF INDUSTRIAL AND COST ACCOUNTANTS OF CANADA  
Incorporated 1920

Editorial and Business Offices: 66 King St. E., Hamilton, Ontario.  
J. N. Allan, R.I.A., Secretary-Manager and Editor

Subscription price to non-members, \$5.00 per year. Single copies, 50 cents.  
Members desiring five copies or more of a single issue, may obtain them at  
25 cents. Opinions expressed by articles and comment are not necessarily  
endorsed by the Society of Industrial and Cost Accountants.

Authorized as second class mail, Post Office Department, Ottawa.

# SOCIETY NOTES



CHARLES R. McFADDEN, R.I.A.  
First President

## **SOCIETY OF INDUSTRIAL & COST ACCOUNTANTS OF NOVA SCOTIA FIRST ANNUAL MEETING**

The Society of Industrial and Cost Accountants of Nova Scotia held its first Annual Meeting on July 21st, in Halifax. Members of Council were elected, and following the Annual Meeting, Council elected its officers as follows:—

President—C. R. MacFadden, R.I.A., Chief Acct. National Sea Products Ltd., Halifax, N.S.

1st Vice-President—Mr. P. J. Carroll, R.I.A., Comptroller of the N.S. Steel & Coal Co. Ltd., Trenton, N.S.

2nd Vice-President—Mr. E. L. Otto, R.I.A., Chief Acct. Moirs Limited, Halifax, N.S.

Secretary-Treasurer—Mr. R. F. Hatfield, R.I.A., Chief Acct. Dept. of Highways, Province of Nova Scotia, Halifax, N.S.

## SOCIETY NOTES

### MEMBERS OF COUNCIL

Mr. W. Dickson, R.I.A.,  
Dir. of Taxation Income Tax  
Division, Dept. of National  
Revenue, Halifax, N.S.

Mr. F. H. Doyle, R.I.A.,  
Comptroller Maritime Tel. &  
Tel. Co. Ltd, Halifax, N.S.

Mr. C. G. Ritcey, R.I.A.,  
Office Manager J. & M.  
Murphy Limited, Halifax,  
N.S.

Mr. G. R. Smith, R.I.A., In-  
ternal Auditor United Service  
Corporation, Halifax, N.S.

Mr. S. S. MacIntosh, C.A.,  
R.I.A., Partner Barrow, Nic-  
oll & MacIntosh, Chartered  
Accountants, Halifax, N.S.

Committees were appointed to deal with education, publicity, research, legislation and membership. The initial projects to be undertaken will include the formation of chapters in Halifax and Sydney, and the institution of the Society's educational program.

Since the organization of the Society in Nova Scotia, there has been throughout the province, a widespread interest in its activities. This spontaneous recognition of their efforts has been most encouraging to the incorporation which no doubt accounted for the unmistakable atmosphere of enthusiasm which was apparent during their first annual meeting and council meeting.

Plans were completed for the commencement of activities in September, and each committee was given its program of work. There is every indication of strong local support for the Chapter in Halifax and Sydney, and a number of student registrations have already been received. The foundation has been truly laid for a very strong organization.

### FERNIE TROPHY

It was announced at the Annual Meeting that the Victoria Chapter had won the Fernie Trophy. This represents a remarkable achievement for this young chapter which increased its membership last year by over 100%. This is the second time in the last three years the trophy has been won by a Chapter of the B.C. Society.

President Norman Terry will formally present the trophy at a meeting of the Chapter in September.

# SOCIETY OF INDUSTRIAL & COST ACCOUNTANTS OF ONTARIO MEDAL WINNERS

## COST AND MANAGEMENT



**FREDERICK G. W. BERLET**  
Kitchener, Ontario

Winner of the Silver Medal for the second highest standing in Advanced Cost Accounting.

Mr. Berlet graduated from Mitchell High School in 1946. Joined the L. McBrine Co. Limited in October 1947 and has now taken over the responsibility for all cost duties with that Company.



**ELWARD G. BURNSIDE, C.A.**  
Toronto, Ontario

Who was awarded the Gold Medal for the highest standing in Advanced Cost Accounting.

Mr. Burnside graduated from Shelburne High School in 1941 and was articulated in the same year to Hill, Teskey & Co. Admitted to the Institute of Chartered Accountants of Ontario in February 1948 and is now a partner in the firm of Hill, Teskey & Co.



**CHARLES A. MILLER**  
Welland, Ontario

Awarded the Silver Medal for the highest standing in Industrial Legislation.

Mr. Miller graduated from the Cayuga and Hagersville High Schools. Served as a Pilot Officer with the R.C.A.F. during the war. Presently employed in the Cost Department of the Page-Hersey Tube Co. Ltd., Welland, Ontario.

## COST AND MANAGEMENT

### New Members

#### SOCIETY OF INDUSTRIAL & COST ACCOUNTANTS OF NOVA SCOTIA CHARTER MEMBERS

- T. E. Brown, Secretary-Treasurer, Acadia Construction Co. Ltd.,  
Bridgewater
- R. C. Buchanan, Office Manager, Moirs Limited, Halifax
- P. J. Carroll, Comptroller, N.S. Steel & Coal Co. Ltd., & Sub-  
sidiary Companies, Trenton
- W. L. Child, Asst. Treasurer, N.S. Light & Power Co. Ltd., Halifax
- J. W. Churchill, Office Manager, Public Service Commission,  
Halifax
- W. Dickson, Director-Taxation, Dept. of National Revenue,  
Taxation Division, Halifax
- F. H. Doyle, Comptroller, Mar. Tel. & Tel. Co. Ltd., Halifax
- H. McD. Flowers, Chief Accountant, Halifax Fisheries Ltd.,  
Halifax
- U. J. Harrington, Municipal Commissioner, Dept. of Municipal  
Affairs, Province of Nova Scotia, Halifax
- R. F. Hatfield, Chief Accountant, Dept. Highways & Public Works,  
Province of Nova Scotia, Halifax
- C. R. MacFadden, Chief Accountant, National Sea Products Ltd.,  
Halifax
- S. S. MacIntosh, Partner, Nicoll, Barrow & MacIntosh, Halifax
- C. G. MacLeod, Accountant, National Sea Products Ltd., Halifax
- J. R. Moffatt, Chief Accountant, Halifax Shipyards Ltd., Halifax
- C. S. Mosher, Gen. Accounting Supervisor, Mar. Tel. & Tel. Co.  
Ltd., Halifax
- E. L. Otto, Chief Accountant, Moirs Limited, Halifax
- J. A. Parker, Secretary-Treasurer, Mersey Paper Co. Limited,  
Liverpool
- G. C. Ritcey, Office Manager, J. & M. Murphy Ltd., Halifax
- G. R. Smith, Internal Auditor, United Service Corp. Ltd., Halifax
- J. E. Tower, Chief Accountant, N.S. Liquor Commission, Halifax
- E. T. Vyse, Comptroller, N.S. Liquor Commission, Halifax
- H. S. Wilson, Secretary-Treasurer, The Fairey Aviation Co. of  
Canada Ltd., Eastern Passage, Halifax County.

#### CALGARY CHAPTER

Miss Roberta M. Berry, Borger Bros. Ltd.

#### HAMILTON CHAPTER

Ernest J. Brittle, Canadian Cannery Limited  
Donald Northey, Silverwood Dairies Ltd.

#### KITCHENER CHAPTER

Norman S. Ireland, Kralinator Products Ltd., Preston

#### LETHBRIDGE CHAPTER

R. N. McDougall, Canadian Western Natural Gas Co. Ltd.

## COST AND MANAGEMENT

### LONDON CHAPTER

Jack F. Dobbie, New Idea Furnaces Ltd., Ingersoll  
Donald G. Black, Pumps & Softeners Ltd.

### NIAGARA CHAPTER

George H. McKay, Alliance Paper Mills Ltd., Merritton  
Edward H. Gorth, Alliance Paper Mills Ltd., Merritton

### PETERBOROUGH CHAPTER

Trevor Lillico, Dominion Woollens & Worsteds Ltd.

### TORONTO CHAPTER

Jack Robinson, Photo Engravers & Electrotypers Ltd.

### NON-RESIDENT B.C. SOCIETY

Mathias A. Herbach, Consolidated Mining & Smelting Co. Ltd.,  
Kimberley.

### NON-RESIDENT CANADIAN

Harold Kern, National Pneumatic Co. Inc., Boston, Mass.

## Current Literature Digest

By W. W. HENDERSON, R.I.A.

**AN INTRODUCTION TO BUDGETARY CONTROL, STANDARD COSTING, MATERIAL CONTROL, AND PRODUCTION CONTROL**—published by the Institute of Cost and Works Accountants (United Kingdom).

This is a research effort of the Institute, the subject being conceived and compiled by the Branch membership thereof. While the book is short in length, it covers the principal tenets of the subjects very fully. It will provide many a guide post for both the installation and administration of such Control techniques.

#### BUDGETARY CONTROL

The book runs the full gamut of the following budgets:—Sales, Production, Operating Expense, Financial and Non-repetitive Income and Expense, Cash, and Balance Sheets.

Comprehensive theory and useful administrative tips are given for all types.

The use of Production Budgets in planning requirements of raw material, labor, machine loads and inventory projections for raw material, sub-assembly and finished goods are comprehensively explained. Planned plant utilization is described. Variance analysis is presented. The four facets of Budgetary Control—co-ordination, planning, forecasting, and measurement—are emphasized and exemplified.

## CURRENT LITERATURE DIGEST

The book describes the uses of Budgetary Control in the penultimate part of this penultimate as follows:—

- (a) To define the objective of the organization as a whole;
- (b) To define the results to be achieved by departments and personnel thereof for the purpose of realizing the organizational objective;
- (c) To reveal the extent by which actual results have exceeded or failed to reach the defined objective;
- (d) To measure the magnitude and establish the causes of the variations as a basis of executive action to correct adverse trends or secure benefits from advantageous conditions;
- (e) To secure the most economical use of the factors of production;
- (f) To provide a measure of the efficiency with which the activities of the organization have been co-ordinated;
- (g) To provide a basis for future policy, and, if desired, revision of current policy;
- (h) To facilitate centralized control in circumstances of decentralized activity;
- (i) To facilitate stabilization of industrial or other activities in conditions subject to seasonal or other cyclical influences.

## STANDARD COSTING

Definitions given to Standard Costing are:—

(1) Standard Cost can be defined as "An estimated cost, prepared in advance of production or supply, correlating a technical specification of materials and labour to the prices and wage rates estimated for a selected period of time, with the addition of an apportionment of the overhead expenses estimated for the same period within a prescribed set of working conditions."

(2) Standard Costing can be defined as "the preparation of standard costs and their use to clarify the financial results of a business, particularly by the measurement of variations of actual costs from standard costs and the analysis of the causes of the variations for the purpose of maintaining maximum efficiency by executive action."

Standard Costing is fully explained as regards the setting of quantity standards for labor time and material. Price standards for these two cost elements are equally well explained. Burden standards and flexible expense budgets are given adequate treatment, as is their co-relation. Variance analysis, including special allowable variances occasioned by unusual circumstances, are given comprehensive explanation.

Standard costs and their function in the matter of (a) cost control, (b) inventory valuation, and (c) pricing, are emphasized.

## PRODUCTION CONTROL AND MATERIAL CONTROL

Some of the many sides of production and material control presented in this book are:—

- Stock control;
- Scheduling material requirements;

## COST AND MANAGEMENT

Purchase requisitioning;  
Purchasing;  
Receiving;  
Issuing from stores;  
Machine loading;  
Issuance of Production Orders;  
Progressing;  
Inspection;  
Entry of finished goods into stock;  
Dispatching to customers;  
Invoicing to customers;  
Use of material control records for cost accounting purposes;  
Use of production control records in connection with labour and overhead costs.

Sample forms are shown in the last few pages as appendices. The complete transactions of an imaginary business for one accounting period have been set out in these appendices.

**THE PRESENTATION OF INFORMATION TO MANAGEMENT**—published by the Institute of Cost and Works Accountants (United Kingdom).

This book is another research project of the I.C.W.A.'s. It serves a most useful purpose. Accountants study the mechanics and mathematics of Accountancy and of Business Administration; but the end result of their work-day efforts—Reports to management of various levels—often reflect immature knowledge of human nature, and of the other fellow's job and requirements.

The views of the writers are presented under four main headings:—

- (a) Introduction;
- (b) General considerations relating to the preparation and presentation of information;
- (c) The requirements of General Management;
- (d) The requirements of Sales Management;
- (e) The requirements of Production Management;
- (f) The requirements of Financial and Office Management.

Sample report forms are liberally exemplified.

It is stated "the form and content of the report should, as far as possible, be suited to the mentality of the person using it, to the purpose for which it is required, and to the possible action which may ensue."

Brevity is stressed. Graphic forms of report presentation are discussed. Redundancy is censured.

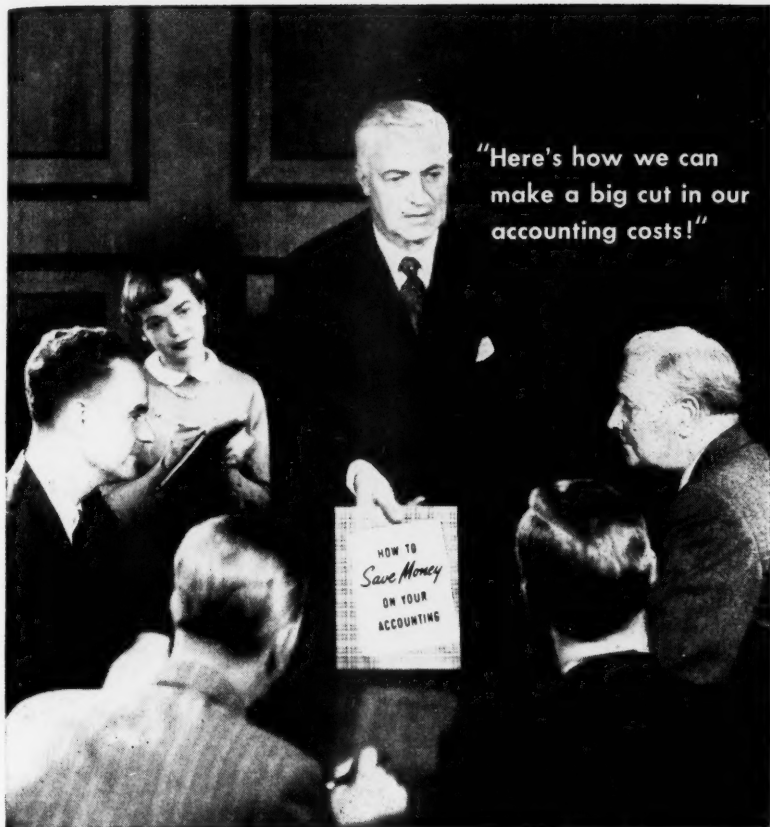
Readers of this booklet will acquire many useful tips on Report form and issuance.

---

## PERSONALS

Douglas S. Beaman has been appointed Office Manager of Blackwood Morton & Sons of Montreal. Mr. Beaman was Chairman of the Speaker's Committee of the Eastern Townships Chapter and will now transfer to the Montreal Chapter.





"It's all here in this booklet. And I've personally checked with firms large and small that have changed to National Mechanized Accounting. They showed me savings of from 20% to 40%. In some cases the savings repaid their entire investment within a year—and then went on paying a substantial yearly return through reduced operating costs.

"These modern National systems give information not available before—information leading to cost reductions.

"We can cut *our* accounting costs just as they did . . . and at the same time get more profit-making information.

"A capital investment that will profitably reduce expenses is *always* justified—and is just as important as a capital investment to increase business.

"We've talked about reducing costs—now let's do something about it!"

Learn the savings you may expect from National Mechanized Accounting. Call your local National representative—a systems analyst. No cost or obligation.

Get this **FREE** booklet, "How to Save Money on Your Accounting," shown in the picture above. Ask your local National representative, or write to the Company at Toronto.



THE NATIONAL CASH REGISTER COMPANY OF CANADA LIMITED

## COST AND MANAGEMENT

# C & M ROUND-UP

By NORMAN R. BARFOOT, R.I.A.

### ECONOMIC INDICATORS

A mid-year summary of the Canadian business scene shows the following:

Employment Total ..... 2.72 Million  
Weekly Payroll (Average) ..... \$92,972,000.00

### INDUSTRY CENSUS

Industry	Employment (Thousands)	Weekly Payroll (Thousands of Dollars)
Manufacturing	1,047	48,508
Logging	32	1,507
Mining	86	4,669
Communications	56	2,356
Transportation	178	9,320
Construction and Maintenance	208	8,986
Services	75	2,253
Trade	296	11,373
Finance	94	3,999

Total industrial production index based on 1939 equalling 100 shows 193.0—Total manufacturing production index=201.6.

Cost of living total index 165.4. Individual indexes reveal—Food 209.0—Fuel and Light 137.1—Clothing 180.7—Rent 132.7—Home Furnishings and Services 166.9—Miscellaneous 132.4.

Bank deposits equal 8,372 million.

Total exports on a monthly average amount to 233.7 millions.

Exports to U.S.A. amount to 148.3 millions.

Total financial holdings of gold and U.S. dollars are 1,255.4 millions.

Carloadings of revenue freight are generally higher than 1949.

Capital investment will reach 3,701 millions by year-end, or 8% higher than last year. Expenditure for new plant and equipment is 50 millions higher than estimated—Mining is up 20 million—Construction 9 million and commercial services 10 million.

Employment and earnings are very high. Cost of living is rising and is at its highest peak since 1939. Bank deposits are an all time high.

Exports and capital investment have increased over first of year estimates and since these two factors are the most important in determining the level of business this trend seems to justify a very optimistic outlook.

### PROFIT SHARING

The council of profit sharing industries in the U.S. is a national non-profit organization of companies that have or plan profit-sharing programs.

## C. AND M. ROUND-UP

It may be interesting to note that in 1948 there were some 90 members of this council, covering 90,000 employees. Present reports indicate that there are 155 members representing 240,000 employees.

The council feels that profit sharing is an effective answer to extreme forms of socialism and mainly it results in increased productivity.

Several of the companies belonging to the council, report that they have not had a work stoppage in the last two years, which seems to indicate that labour troubles do not affect a profit-sharing company as seriously as others.

## FIVE-YEAR UNION CONTRACTS

The recent contract agreements between several of the large corporations and their respective unions on a five-year basis is most interesting. It demonstrates a great confidence on the part of the companies concerned in their own future and the future of this continent. The contracts call for annual wage increases within this five-year period.

The extra productivity resulting from five years of industrial peace will apparently give the corporations additional funds to pay the increases mentioned in the contracts.

This is certainly a new idea and one which may very well become a pattern for bargaining on the labour front in the immediate future.

The immense value to the financial branches of these companies in allowing long-term planning, of course goes without saying.

## BILLION DOLLAR CORPORATIONS

Canada has become a country of big businesses. There are six companies in Canada with better than one billion in assets. These are:

Canadian National Railways .....	2.48 Billion
The Royal Bank of Canada .....	2.33 Billion
The Bank of Montreal .....	2.14 Billion
The Canadian Pacific Railway .....	1.71 Billion
The Canadian Bank of Commerce .....	1.65 Billion
Sun Life Assurance Company .....	1.53 Billion

A total of 22 Canadian companies to-day have assets of more than 250 million. Altogether, their total wealth adds up to better than 19 billion dollars. Among the 22 top corporations there are 8 banks, 6 insurance companies, 4 manufacturing industries, 2 railroads and 2 public utilities.

## CANADIAN PRODUCTIVITY

It may be interesting to note that although the population of the United States is eleven times that of Canada, the productive output is 16 to 17 times.

It is apparent that we have a long way to go in this country in order to reach American production totals. It is sometimes questioned as to the reason for our comparatively lower wages and I think that a good part of the cause for this condition is in our lower productivity. The lower productivity is due to manufacturing methods and size of market to some extent and probably to the slow shift from a large primary economy (agricultural) to an industrial one.

## Food Cost Control

By HENRY W. ESPERSEN

Of the Firm of Horwath & Horwath

This article outlines a system of food cost control including beverages, for commissary caterers. Problems of analyzing the food costs and the food sales are covered very effectively. While the systems described apply more particularly to larger hotels, clubs and similar establishments, reference is also made to less complex operations.

This discussion covers a type of cost accounting somewhat different from the one with which the average Cost Accountant is probably most familiar.

Some of the differences between the general accounting practices in food operations and those in most other businesses should be pointed out at the outset. In the first place food cost, as shown in the profit and loss statements for operations having food service, includes only the actual material cost, and payroll and other expenses are shown separately. There is a reason for this, as payroll and other selling costs cannot be accurately allocated to a particular product, because of the very nature of the operations in a kitchen. The fact that food production is to a large degree subject to the immediate and often unpredictable demands of the public, frequently results in one person's working on four or five different dishes or processes simultaneously. Thus, the methods followed in Process Cost Accounting, or Job Order Costing, cannot be successfully applied. It has been attempted, but the results served more to confuse than to clarify the operational reports.

Another important factor affecting the methods of control on food costs is that the units of purchase for food items cannot be as standardized as those for most staple items entering into average manufacturing costs. A sheet of tin, for instance, can be accurately measured or laid out to yield a certain number of units and, given a price per pound for the tin, a standard unit material cost can be determined. Not so, however, with food. For example, the yield of steaks, filet mignons, pot roast, hamburger, etc. from one full loin of beef might vary somewhat from

## FOOD COST CONTROL

that from another full loin of the same grade, weight and cost per pound. This variation is due to the difference in the ratio of fat, bone and trim to the total weight that frequently occurs in similar primal cuts of meat and also to the relative efficiency of the butchers who trim it. Purchasing and portion specifications are, therefore, set up not only to reduce such fluctuations to a minimum, but also to standardize service.

While the principles of food cost accounting, or as it is more generally termed, food control, are much the same in all types of operations, the methods of approach and the forms of the reports vary considerably, and if it is to be effective a mere clerical facility with the mechanics of the work is not enough. Instead, it must be handled by someone with a good basic knowledge of food merchandise and kitchen operations.

A good food cost accountant must be more than just a good man at figures. He has a much broader function and should act as an advisor to management on all questions concerning the operation of the food department, whether they be in regard to the specifications of merchandise to be purchased, the composition of the menus, the size of portions to be served, the prices to be charged, or a more efficient layout of the kitchen equipment. Thus, the scope of his duties is considerably wider and more diversified than a mere interest in the cost figures.

By all of this, it is not implied that the food controller is solely responsible for all of these various functions, as most hotels, clubs and institutions employ a purchasing agent, catering manager and a chef who are individually responsible for their respective duties. He must, however, be able to point out to management any situation which may adversely affect the operating result of the department.

Let us assume, for instance, that merchandise of inferior quality, or some that does not conform to the established specifications of size, weight or trim has been delivered and accepted. It is the duty of the food controller to observe this and see that it is corrected.

Let us not, however, confuse food control or the functions of the food cost accountant with restaurant management. For reasons peculiar to each individual establishment, this cost-finding department may be under different authority or supervision in different institutions. But in every case cost finding is an auxiliary, or staff function, which serves to supply infor-

## COST AND MANAGEMENT

mation to aid those responsible for, and in direct charge of, expenses incurred.

The aim and purpose of any food cost system is to obtain a result which is in line with the potential accomplishment. Such potential is determined by the market prices paid, the size of the portions served and the selling prices. The results are usually reported in terms of the cost per dollar sale. In hospitals and other operations where there are no recorded sales the result is shown as the cost per meal served.

There are several systems of food control, three of which are here summarized briefly. One, which is now practically out of use, is known as the "Blue Book Method". This procedure calls for a ledger account for each food commodity, to which account all charges and sales of the item are posted. Once each week an inventory of the producing department is taken, which, in terms of general cost accounting, would be the "work in process". The net cost arrived at on the basis of beginning inventory, plus issues from stock, minus ending inventory, would then be shown in ratio to the sales credits, or as it is generally referred to, the cost per dollar sale.

On the basis of previous cost tests and study, the potential result of each item is indicated at the top of each account sheet and the actual results are compared with the potential. Any serious deviation from the "standard" would require investigation. The theory, which is basically sound, is that if each item is properly controlled the total operational result must be satisfactory.

One of the systems, which has best stood the test of time, was developed in about 1915 and is still in wide use, provides for the daily distribution (Page 265) of the raw food costs and the food sales into about 60 separate items and groups, which are sub-divided into the departments responsible for the preparation of the food. By this method, the cost and sales for each of the items and for each sub-department are easily compared, and where the results are questionable an immediate investigation can be made to determine the cause and correct it. The advantage lies in the fact that reports are rendered daily and in a detailed form. Food control holds each producing department—that is—the kitchen, pantry, pastry and bake shop—and each commodity responsible for its share in the general result, and

## FOOD COST CONTROL

demands the reason for an unsatisfactory result in any department, or on any commodity.

A comparatively new approach to the control of food costs, and one which currently is the subject of much discussion, is the so-called "pre-cost" method. This is to some extent a return to the "Blue Book" mentioned earlier, and while the principles behind this system are old and have been applied effectively for years, their consolidation into a full program is comparatively recent.

The foundation of the pre-cost system, like the others already mentioned, is a complete series of butchering and cooking tests to determine the merchandise costs of all of the principal finished items offered on the menus.

The second basic record that must be built up under this system is an historical record of the number of orders sold of each important item on each of the menus. From this data the food controller attempts to forecast the number of orders of a given item that will probably be sold one, two or even three days in advance. With the cost tests and the menu forecast available, the actual work of pre-costing and control can get under way.

First, the proposed menus for the following day, or two days hence as the case may be, are taken by the cost accountant and the principal menu items are transcribed to a pre-cost form. By projecting the cost and selling price of each item the individual dollar costs are calculated and the total cost, sales value and dollar cost for the entire group is figured. If the total result is not acceptable, profit-wise, the chef is consulted with a view to making suitable substitutions on the menu to the end that an acceptable return may be expected.

There are some proponents of this system who claim to carry the system to the extent of restricting the purchasing of supplies and the issues to the kitchen on the basis of the sales forecasts. However, in the opinion of some food cost accountants, the many unpredictable factors which influence the public's choice of food in the average restaurant make such a curtailment dangerous and impracticable. There is no doubt that such a procedure would function well in a school, factory, or institution where the menu choice is limited and the number of diners is guaranteed.

## COST AND MANAGEMENT

In all of the various cost systems used the daily cost of food is based on the material cost of food issued on requisitions to the producing departments, plus any direct charges for perishable items, etc. that may not be handled through the storeroom. However, at the month end, complete inventories of the storeroom and the producing departments are taken and the actual cost of food consumed equals the beginning total inventory, plus purchases, less ending total inventory. These controlling figures are, of course, carried in the general ledger of the accounting department, and the food controller is required to tie in his final results with them.

Under any system, a proper control on the merchandise in the storeroom is one of the important responsibilities of the food cost accountant, and he must reconcile the value of each month-end inventory with the book value, which equals the storeroom beginning inventory, plus stores purchases, less stores issues.

A perpetual inventory record for food stores is not usually recommended, as experience has proven that a thoroughly satisfactory control of stock can be maintained without this time-consuming process. However, where liquor stock is handled, a perpetual inventory record is a "must".

A very simple and effective method for use in food store-rooms is to require the receiving clerk to write the purchase price per dozen or selling unit with a crayon pencil on each case or container when it is delivered. As the merchandise is removed from its original container to be placed on the shelves, the store-room man writes the individual unit cost on each can, bottle or package with a crayon. In this way, every item in stock is plainly marked with its cost price and, as it is issued, the price is immediately entered in the unit cost column on the requisition form. Thus, no price book is required, no time is lost in searching for purchase prices, and an accurate cost record is easily maintained.

Where perishable items, such as meat, poultry, vegetables or fruit are handled through the storeroom, tags showing the unit costs are attached to the various items. As this type of merchandise is issued, the price shown on the tags is entered on the requisition and the tags are removed and held for the food controller, who should maintain subsidiary controls on all perishable items. Such controls should enable the food cost accountant to spot-check the remaining count and value balances for the



## FOOD COST CONTROL

various items with the actual physical inventory at frequent intervals, daily if necessary.

Up to this point the discussion has concerned the type of systems that are more generally in use in the larger hotels, clubs and similar operations. However, each type of operation has its own particular problems, and any system must be flexible

## DAILY SUMMARY OF FLOOD COST

	THIS MONTH		TO DATE		RATIO TO TOTAL SALES			
COST OF SALES	TODAY	TO DATE	LAST MONTH	LAST YEAR	TODAY	TO DATE	LAST MONTH	LAST YEAR
Beef								
Veal								
Lamb and Mutton								
Pork								
Poultry								
Fish								
Vegetables								
Fruits								
Ice Cream								
Milk and Cream								
Eggs								
Cheese								
Butter								
Coffee								
Oil and Shortening								
Bake Shop								
Dairy Shop								
Dining Room								
Groceries								
Staples								
TOTAL COST								

## STATISTICS

[illegible]

(Exhibit 8)

# EXHIBIT A

Patent Applied for  
Form 130

Designed by HORNATH & HORNATH

Total Number of Meals Today

" " " To-Date

## DAILY REPORT AND SUMMARY TO-DATE OF COMMISSARY OPERATION

Date 1914

Day

Weather

### COST AND MANAGEMENT

KITCHEN	FOR THE DAY		%	TO DATE		FOR THE DAY		TO DATE	TO DATE
	COST	SALE		COST	SALE	COST	SALE		
SOUP									
Gr. Turtle & Terrapin									
Fish									
Lobster									
Crabs and Crabmeat									
Roast Beef									
Short Loin									
Beef, Misc.									
Veal									
Lamb and Mutton									
Provisions, Misc.									
Roast Chickens									
and Broilers									
Guinea Hen									
Fowl and Turkey									
Sweet Breeds									
Squabs									
Ducks and Geese									
Game									
Delicatessen									
Caviar									
Eggs									
Vegetables									
Spices									
Cereals									
Condiments									
Fruit									
Sauces									
PASTRY SHOP:									
Milk									
Eggs									
Butter									
Flour									
Lard and Subst.									
Groceries									
Bread and Rolls									
TOTAL									
BAKE SHOP:									
Milk									
Eggs									
Butter									
Flour									
Lard and Subst.									
Groceries									
Bread and Rolls									
TOTAL									
REGULATION									
D. W. BUTTER									
D. R. GROCERIES									
BAKE SHOP									
DIE IN SALES									

## FOOD COST CONTROL

[illegible]

# COST AND MANAGEMENT

enough to be adjusted to the conditions and circumstances encountered. Hospitals, schools and industrial plants each require their own special approach to food cost control, just as do steamships, railroads or airlines.

Before getting off the subject of systems a modified method

EXHIBIT C-1				SALES AND COST SUMMARY		COST SUMMARY	
TODAY		TOTAL		COST SUMMARY		TODAY	
Sales: By the Bottle				Bar Inventory at Beginning			
By the Glass				Issues: Wine Cellar			
Cost: By the Bottle				Food Stores			
By the Glass				Kitchen, etc.			
Total				Direct Purchases			
TODAY				Total			
Sales: By the Bottle				Bar Inventory at End			
By the Glass				Cost			
Cost: By the Bottle				WINE CELLAR			
By the Glass				Inventory at Beginning			
Total				Purchases for Cellar			
Cost: % By the Bottle				Total			
By the Glass				Issues: Bars			
Total				For Cooking			
TODAY				Employees			
Sales: By the Bottle				Loss and Breakage			
By the Glass				Total Credits			
Cost: By the Bottle				Inventory at End			
By the Glass				GRATIS FOOD (Expense)			
Total				Issues: Food Stores			
TODAY				Kitchen, etc.			
Sales: By the Bottle				Total			
By the Glass				BAR			
Cost: By the Bottle				Weather			
By the Glass				Dr.			
Total				Day			
TODAY				PRICE DIFFERENTIAL: Today			
Sales: By the Bottle				SERVICE DIFFERENTIAL: Today			
By the Glass							
Cost: By the Bottle							
By the Glass							
Total							
TODAY							
Sales: By the Bottle							
By the Glass							
Cost: By the Bottle							
By the Glass							
Total							
TODAY							
Sales: By the Bottle							
By the Glass							
Cost: By the Bottle							
By the Glass							
Total							
TODAY							
Sales: By the Bottle							
By the Glass							
Cost: By the Bottle							
By the Glass							
Total							
TODAY							
Sales: By the Bottle							
By the Glass							
Cost: By the Bottle							
By the Glass							
Total							
TODAY							
Sales: By the Bottle							
By the Glass							
Cost: By the Bottle							
By the Glass							
Total							
TODAY							
Sales: By the Bottle							
By the Glass							
Cost: By the Bottle							
By the Glass							
Total							
TODAY							
Sales: By the Bottle							
By the Glass							
Cost: By the Bottle							
By the Glass							
Total							
TODAY							
Sales: By the Bottle							
By the Glass							
Cost: By the Bottle							
By the Glass							
Total							
TODAY							
Sales: By the Bottle							
By the Glass							
Cost: By the Bottle							
By the Glass							
Total							
TODAY							
Sales: By the Bottle							
By the Glass							
Cost: By the Bottle							
By the Glass							
Total							
TODAY							
Sales: By the Bottle							
By the Glass							
Cost: By the Bottle							
By the Glass							
Total							
TODAY							
Sales: By the Bottle							
By the Glass							
Cost: By the Bottle							
By the Glass							
Total							
TODAY							
Sales: By the Bottle							
By the Glass							
Cost: By the Bottle							
By the Glass							
Total							
TODAY							
Sales: By the Bottle							
By the Glass							
Cost: By the Bottle							
By the Glass							
Total							
TODAY							
Sales: By the Bottle							
By the Glass							
Cost: By the Bottle							
By the Glass							
Total							
TODAY							
Sales: By the Bottle							
By the Glass							
Cost: By the Bottle							
By the Glass							
Total							
TODAY							
Sales: By the Bottle							
By the Glass							
Cost: By the Bottle							
By the Glass							
Total							
TODAY							
Sales: By the Bottle							
By the Glass							
Cost: By the Bottle							
By the Glass							
Total							
TODAY							
Sales: By the Bottle							
By the Glass							
Cost: By the Bottle							
By the Glass							
Total							
TODAY							
Sales: By the Bottle							
By the Glass							
Cost: By the Bottle							
By the Glass							
Total							
TODAY							
Sales: By the Bottle							
By the Glass							
Cost: By the Bottle							
By the Glass							
Total							
TODAY							
Sales: By the Bottle							
By the Glass							
Cost: By the Bottle							
By the Glass							
Total							
TODAY							
Sales: By the Bottle							
By the Glass							
Cost: By the Bottle							
By the Glass							
Total							
TODAY							
Sales: By the Bottle							
By the Glass							
Cost: By the Bottle							
By the Glass							
Total							
TODAY							
Sales: By the Bottle							
By the Glass							
Cost: By the Bottle							
By the Glass							
Total							
TODAY							
Sales: By the Bottle							
By the Glass							
Cost: By the Bottle							
By the Glass							
Total							
TODAY							
Sales: By the Bottle							
By the Glass							
Cost: By the Bottle							
By the Glass							
Total							
TODAY							
Sales: By the Bottle							
By the Glass							
Cost: By the Bottle							
By the Glass							
Total							
TODAY							
Sales: By the Bottle							
By the Glass							
Cost: By the Bottle							
By the Glass							
Total							
TODAY							
Sales: By the Bottle							
By the Glass							
Cost: By the Bottle							
By the Glass							
Total							
TODAY							
Sales: By the Bottle							
By the Glass							
Cost: By the Bottle							
By the Glass							
Total							
TODAY							
Sales: By the Bottle							
By the Glass							
Cost: By the Bottle							
By the Glass							
Total							
TODAY							
Sales: By the Bottle							
By the Glass							
Cost: By the Bottle							
By the Glass							
Total							
TODAY							
Sales: By the Bottle							
By the Glass							
Cost: By the Bottle							
By the Glass							
Total							
TODAY							
Sales: By the Bottle							
By the Glass							
Cost: By the Bottle							
By the Glass							
Total							
TODAY							
Sales: By the Bottle							
By the Glass							
Cost: By the Bottle							
By the Glass							
Total							
TODAY							
Sales: By the Bottle							
By the Glass							
Cost: By the Bottle							
By the Glass							

# FOOD COST CONTROL

of food cost control should be touched on briefly. All of the ground work, such as making the basic cost tests, establishing proper controls over purchasing, receiving, issuing, portion sizes, etc. are still required, because these things are the backbone of any system. The difference, however, lies in the fact that only

## EXHIBIT C SUMMARY OF BEVERAGE OPERATIONS

Designed by  
Howard G. Hirsch

Form 11-1-48

I. BAR OPERATIONS	BY THE BOTTLE				BY THE GLASS				OFFICERS	
	TO DAY		TO - DATE		TO DAY		TO - DATE		SALE VALUE	
	COST	SALE	COST	SALE	COST	SALE VALUE	COST	SALES VALUE	Today	To-Date
Champ—Imported										
Champ—Domestic										
Still Wine—Imported										
"    —Domestic										
Bye Whiskey										
Bourbon Whiskey										
Scotch Whiskey										
Gin Whiskey										
Gin										
Brandy										
Vermouth										
Appetizers & Cordials										
Beer and Ale—Bottled										
"    "    —Draught										
Non-Alcoholic										
Bitters										
Syrups										
Carbonic Gas										
Food For Mixing										
Cocktails										
Milk, Cream										
Sales by the Glass (Officers)										
Price Differential										
Service Differential										
Total Charges										
Credits: Bar Cash Draught Beer										
"    "    —Other										
Sales by Glass on Check—Draught Beer										
"    "    "    —Other										
Backstage and Spoilage										
Officers										
Total Credits										
Short or Over										

## COST AND MANAGEMENT

the food costs and not the food sales are analyzed. This, in itself, is a great conserver of time as well as of clerical payroll.

The food costs are segregated daily on a control sheet (Page 265) into eighteen or twenty representative groups, and the ratio of each group to the total food sales is shown for the day and cumulated for the month-to-date. As the sum of all these ratios equals the total cost ratio to sales, or, as it is more commonly known, the dollar cost, it is clear that any adverse trend in the total will be reflected in the ratios of one or more of the commodity groups. After a reasonable experience of record has been provided or acquired, the variance in the respective cost ratios to sales points of the commodities shows which are out of line cost-wise, for it is surprising how true the pattern of commodity ratios to sales runs in operations of similar natures.

One great advantage of this form of cost control is that it lends itself equally well to all types of operations and it is particularly adaptable to schools and industrial feeding set-ups. However, one very emphatic statement should be made, and that is that no system is any better than the person who operates it, and that you can't accomplish any tangible results just by putting in some well designed forms and hiring a clerk with no practical experience to maintain them.

Two controls other than those for food costs should be considered: payroll control and bar control.

Because of the increasing importance of payroll in relation to operating results in all operations, the necessity for a systematic control over this expense is becoming more and more urgent. In many instances it supersedes in importance that for any other expense.

The daily control of the catering department payroll is frequently handled by the food controller. The report form is so designed as to show the results by occupational groups, that is, supervision, preparation, service, warewashing and general, and sub-divided as to specific positions in each group. The detail for the day and the cumulative month-to-date figure show the number of man-days worked in each position, the amounts of payroll, the ratio of payroll cost to total food sales and the average number of covers served per man-day. The calculation of the average covers served per man-day is a sort of efficiency rating and is sometimes more informative than the payroll cost

## FOOD COST CONTROL

ratio to sales. The reason for this is that it is not influenced by paid days off, fluctuating salary rates, or other considerations that affect the cost ratio. With such a daily report, management is in an excellent position to appraise a payroll properly.

Beverage operations lend themselves more readily to systematic control than do either food or payroll. The simple reason is that the merchandise is purchased in standard sized bottles, served in measured quantities and sold at definite prices.

An excellent control system for bars, is in wide use throughout the country, and has saved millions of dollars where beverage operations are concerned. The basis of this control is the establishment of the potential sales value of the merchandise consumed, which is checked against the actual sales recorded. This can be done as frequently as desired, daily if it appears necessary.

The procedure is to take an accurate bar inventory, estimated in tenths of bottles, both at the beginning and at the end of the control period. All merchandise issues to the bar are posted to their respective commodities on the control sheets and the consumption, which is represented by beginning inventory, plus issues from stock, minus ending inventory, is extended at both unit costs and unit sales values.

The form of the daily beverage report (Page 269) segregates the various classifications of beverages, such as wines, bourbon, Scotch, gin, rum, etc. and shows the cost and sales values for the day and those cumulated for the month-to-date, and the resultant costs per dollar sale for each group. The variance between the actual sales and the total potential sales value thus indicated should not exceed 2%. A shortage in actual sales would indicate over-pouring or the pilferage of either cash or merchandise, while an overage would indicate under-pouring or dilution of the merchandise. It is clear that either situation would be equally unsatisfactory from the operators viewpoint and it is a short-sighted businessman indeed who would fail to protect himself against them.

In conclusion, it is not alone the method or the system of control that gets the desired results, but, to a large degree, the ability of the individual assigned to it and the use to which the information supplied by such a system is put.

## Why Industrial Engineers do not Reach Top Management

By **BRUCE WALLACE**

Vice-President, Otis Elevator Company

Here is a frank and forthright article drawing attention to those factors which retard the entry of industrial engineers into the levels of top management. Mr. Wallace stresses, among other things, that industrial engineers will need to broaden their knowledge in those phases of corporate management beyond that of the specialized field of engineering. He mentions more specifically the field of cost accounting and has echoed the comment by many industrial leaders that the great need in industry is the cost engineer.

When I was approached to address this group on this subject, my first inclination was to say no, as I had always been pretty well satisfied with the number of Industrial Engineers of my acquaintance who had been successful, but the more I thought of the subject, the more I realized that there weren't nearly enough of them in top management.

I accepted the invitation with the hope that it might be worth while having someone who is an Engineer and who has the Engineer's interest at heart tell a group of Industrial Engineers what he thinks is keeping too many of them back and to offer a few suggestions to correct those weaknesses.

I believe that Industrial Engineers have practically all of the requisites for success.

Surely no class of employees is better prepared by training to solve the complex problems that require careful analysis, complete understanding, unbiased reasoning and the ability to write straightforward, factual reports on their findings. In this discussion I am referring to the Industrial Engineer who is employed in industry on some phase of wage incentive or process improvement work and not to the Consulting Engineer,

**EDITOR'S NOTE:**—This paper was presented before the Annual Conference of the Society for Advancement of Management, and is published herewith through the courtesy of the Society and the author.



## INDUSTRIAL ENGINEERS AND MANAGEMENT

who, by the very nature of his varied assignments, has had a better opportunity to train himself for larger jobs.

Why is it then that more Industrial Engineers haven't made better progress? Probably the most important factor has been that Engineers have traditionally been specialists. They started that specialization early in their college days and have continued it throughout their professional careers. Even the college curriculum of years gone by was too specialized, and if that were not the case, most engineering students made the condition worse by showing very little interest in subjects not closely related to Engineering. Such subjects as English and Economics were generally given the minimum of attention. In retrospect, I think most of us would now admit that we would be better off if we had concentrated a little more on such subjects.

Even after graduation most Engineers have continued to be specialists with the result that they have had experience in a very narrow phase of a particular business.

There is nothing wrong with that, as there are very fine positions in the strictly professional field of Engineering. It is an honourable profession and most Engineers would probably prefer to stay in the strictly professional field.

We are now considering the ones who would like to get into the general administrative field with the hope that they will get farther ahead there.

The Industrial Engineer is in a better position to become familiar with a wide sector of his company's operations than most of his professional brothers, but his field is still too limited, too specialized for complete success, unless he deliberately sets about to broaden his field of activity.

Industrial Engineers, in general, have concentrated their efforts on a small segment of the cost of the product. They have done a fine job on reducing the productive labor content of manufacturing costs. The savings have been enormous. Their effort has contributed greatly to the tremendous productivity that we enjoy in this country. That productivity makes this nation the best fed, the best clothed and the best housed nation in the world and permits the average working man to enjoy comforts that only the rich in other lands can have.

It is true that Industrial Engineers have also made some progress in improving the efficiency of non-productive labor but,

## COST AND MANAGEMENT

generally speaking, I believe we must admit that it is only the productive labor that has been well controlled.

They have been concentrating their efforts on somewhere between 10-15% of the sales dollar. It may be higher in some types of manufacture, but it is still a small percentage. It is true it was a much larger percentage before he started his work, but the man who aspires to company-wide recognition must exert some influence on a greater sector of the company's activities.

### WHAT IS THE INDUSTRIAL ENGINEER TO DO ABOUT IT?

He must broaden his scope and realize that great opportunities exist for him in the control of that other 85-90% of the sales dollar.

The opportunities in that field are just as great as he found them when he first tackled the problem of improving the efficiency in the productive labor group. And, since the field is far greater in dollars, the opportunities are greater.

The Engineer cannot just drop his present work and begin to move into the other departments' affairs, but he can start a campaign of self education, break away from this concentration on a specialized field, and begin to learn about the overall operation of general business and of his company's business in particular.

He will find that there are many problems other than that of production, the one with which he is already thoroughly familiar. He will find that the business structure is built on about the same principle as a milking stool. It depends upon the correct functioning of three legs—Production—Sales—Finance. If he follows that analogy further, he will see that all of the legs are of equal importance in that the failure of any of them to perform properly will have the same effect on a business as it would on the milker if one leg collapsed.

Fortunately, for the ambitious Industrial Engineer, there are excellent opportunities for him in two of the three major divisions of business. It should be obvious to everyone that maximum success will not be achieved by anyone who limits his knowledge of business solely to one phase. Certainly, the factory manager is better off and will be far more successful if he has some knowledge of the simple truths involved in the financial operation of the plant and of the principal sales problems be-

## INDUSTRIAL ENGINEERS AND MANAGEMENT

setting his company. The budget director will perform his task better if he understands the complications of factory operation.

### WHERE ARE THESE OPPORTUNITIES THEN?

I believe that the training the Industrial Engineer has received is a sound foundation for success in either the manufacturing or financial end of a business. It is a foundation only and the structure must be supplied by the diligence and application of the individual, and by his willingness to study and prepare himself for wider responsibilities.

Industry is full of examples of Industrial Engineers who have gone to the top in the manufacturing end of industrial organizations.

The daily activity of the Industrial Engineer endowed with mechanical ability should have given him a detailed knowledge of the technical problems of manufacture second to none in the plant, since no other position in a plant permits the time for observation that is afforded the time study man in the carrying on of his normal job from day to day. He is the only man in the plant of equal status who has complete freedom to study the detailed operations without being bothered by the responsibility involved in the supervision of some department. No foreman or superintendent has that opportunity.

That experience, however, is confined to a very limited technical phase of the problems of production.

The day has passed when knowledge of machine operation or assembly procedure qualifies one to become a manager of a manufacturing plant. It scarcely qualifies one to become a foreman to-day. The business of administering a plant is far broader than that.

The men who reach the top in manufacturing are those who have rounded out their experience by learning something of production control, personnel problems, costs and expense control.

You will find that the plant manager spends very little of his time on improvements in operations. He leaves that to a plant superintendent and the Industrial Engineer. He devotes his time to ironing out personnel problems, determining the correct rate of production, putting pressure on here and there to get orders out on time, finding out why his inventory has gone up or trying to find out why his expense did not drop when the

## COST AND MANAGEMENT

volume did, or why the cost of some new product was higher than estimated.

The Industrial Engineer must take a real interest in and prepare himself on subjects like that if he is to rise to the top in the manufacturing field. I believe the opportunities in this field are pretty well understood by all.

\* \* \* \*

It is in the financial field that I feel there is an unrecognized opportunity for the Industrial Engineer. By financial, I mean all of the allied activities that affect or control the company's financial position. This includes the operation of the wage incentive system, the cost system, budget system and even the corporate accounting which is actually the recording of what has been done in the other activities. When you stop to think of it, these activities are closely allied. When you set a standard, you start in motion a series of events that affects all these activities and affects the company's profits. Your standard establishes the cost of the item and—to the extent that costs influence selling prices—you establish the selling price.

In any case, your standard is a factor in the profit or loss of that particular item.

In my opinion, there never was a time in which sound costing and good budget control were so vital to the success of an industry as they are right now. Therefore, there never was a time in which the financial end of the business was called upon to be as sound as it must be now and in the future. Therefore, there never was a time in which the opportunities for qualified men were as great as they are right now in the financial end of industry.

## WHY IS THAT?

Industry has been rolling along at an abnormally high volume throughout the war and for the post-war years. The cost of increases in labor rates and so-called social gains could be recovered in the price a willing customer would pay. This was a comfortable condition and, undoubtedly, contributed to a much more liberal expense structure in most industries than prevailed before the war. Part of this increase is the result of new duties imposed by legislation—part by the desire to improve industrial relations—but if we are really candid, we must

## INDUSTRIAL ENGINEERS AND MANAGEMENT

admit part was due to the fact that we were all prosperous and, consequently, too easy going.

We have seen signs that this condition is changing. There is now a universal demand for lower prices but, at the same time, there is an insistent demand on the part of labor, supported by a friendly Government, for increases in wages and for pensions and insurance, all of which will result in further increases in the cost of doing business. It is the case of the irresistible force meeting the immovable body with industry in between.

That alone would be a serious threat to industry, but it is made worse by the fact that it occurs at a time when business is operating at a peak volume. It is inevitable that the volume of business, in general, will fall off from its present peak at some time in the not too distant future.

The profits, of which labor and the Government have been complaining, will then disappear rapidly. It is at that time that sound knowledge of costs and a firm control of expense will spell the difference between success and failure for many companies.

It has always been difficult for industry to reduce its expense as fast as it should when volume drops off. That is due to several reasons: one being that we are usually optimistic about the future and believe that the reduction in volume is temporary; another that we are reluctant to dispense with personnel who have cost a great deal to train and another that it is not as obvious that there are too many employees in any department at a given volume when business is shrinking as is the necessity for putting more employees on when business is expanding. It will be far more difficult, in the future, to reduce expenses as volume shrinks, as many changes have taken place since before the war to make overhead less flexible than it formerly was. For example, such items as hourly vacation and holidays will remain substantially fixed if we attempt to reduce production by reducing working hours. If we elect to reduce production by reducing the labor force, the seniority clause in labor contracts has a tendency to delay and partially offset the reduction in expense. This is due to the fact the workers with the highest seniority are almost always the high rated workers which increases the average rate of pay. When we make layoffs, we are forced to make many extra transfers of operators from one job

## COST AND MANAGEMENT

to another in order to retain the ones with the highest seniority, and this requires a great deal of additional training, as seniority does not necessarily fit a man for a lesser job.

Even the good work of the Industrial Engineer has tended to decrease the flexibility of overhead.

The reduction in productive labor costs which has been brought about by the use of new tools did not reduce the overhead but, actually, added to it a fixed item of depreciation. The reduction in productive labor costs brought about by wage incentive did not reduce overhead but, generally, added some salaried people to the payroll for the administration of the plan.

All of these additions to the fixed element of overhead have a tendency to increase the break even point of industry.

Even if we have been successful in passing on to our customers all of the increases in cost that have taken place up to this time so that we now enjoy the same percentage of profit we formerly did, the increase in the break even point will cause industry to go into the red sooner as the result of a much smaller shrinkage in sales volume than would have been the case ten years ago.

### WHY DOES THIS SITUATION HELP THE INDUSTRIAL ENGINEER?

It adds to the importance of the Cost and Budget Departments. Cost engineers and budget directors are not born in these jobs—they have to come up through some avenue of training. I believe that Industrial Engineering is the proper background for a cost engineer or a budget director to have provided he can get away from his specialized field and accept broader responsibilities. You have every advantage in these fields over the man who has come up through the accounting end of the business, for example, because you are familiar with the product and the operations performed upon it. In addition to that, the education and training of the engineer should enable him to analyze clearly and solve the many mathematical problems involved in establishing costs and variable budgets.

You have another advantage in that you can establish your wage incentives so that they will assist you in developing both cost and budget systems. You know that one of the most difficult problems that has always faced cost and budget directors has been the selection of a dependable denominator to work with. They have always envied the manufacturer of a simple product

## INDUSTRIAL ENGINEERS AND MANAGEMENT

like that of the cement manufacturer. His cost and budget departments have a particularly simple task as long as he continues to distribute his product in a single sized bag, as they can express their costs and budgets in terms of the product "bags of cement". The minute he sells cement in barrels or in bulk shipments, he has to adopt some arbitrary substitute like pounds or tons, and he is no better off than the rest of the manufacturers.

Since most industry does not manufacture a single product which will lend itself to use as a denominator for its own costs, it has been necessary to adopt some arbitrary ones. As you know, the common ones are the productive labor hour with all the variations growing out of changes in efficiency and the one which is more commonly used—the productive labor dollar. This dollar figure has all of the weaknesses inherent in the productive hour compounded by the variations in rates of pay of productive labor.

You have in your possession the ready made tool, the standard minute or hour, whichever you use in your wage incentive system. The use of one of these puts the costing problem of the manufacturer of a complicated product right back in the class of the cement manufacturer who devotes himself to shipping his product in bags.

Weave that denominator into your cost structure and your budgets and you will find yourself in a position to do something about a big part of the sales dollar which you have not, up to this time, done anything about.

We are prone to speak glibly of the control of expense through the use of budget systems. I would like to caution you about the fact understood by all who are familiar with budgets, that the budget alone does not control expense. It merely measures it. It performs the same function in business as a clinical thermometer does in the hospital. The thermometer does not cure the fever, it merely calls attention to the fact that there is a fever and measures the extent of the variation from the normal temperature. The doctor has to diagnose the case and prescribe the remedy. That is the part you will have to play if you work your way into the field of directing budgets. Your previous training in analyzing difficult problems will stand you in good stead in this field. You do not have to wait until you are a budget director to begin to study overhead expense. If you have the opportunity to devote as much concentrated effort

## COST AND MANAGEMENT

to any classification of overhead expense as you have applied to productive labor, you will find that there is room for improvement in practically every one.

The study of overhead expense will be a new problem to you because it does not lend itself to the same treatment as you use in establishing wage incentive standards on productive labor, but, in principle, the problem is the same.

Many Industrial Engineers have full appreciation of the necessity for doing the things that I have outlined and many, no doubt, have extended their activities into these fields.

As a group, however, it would appear that Industrial Engineers have not taken full advantage of the opportunities that exist in industry for them or they would occupy a much broader field than they have occupied, or more would have reached their goal. In summing up, let me emphasize these points:

### « STUDENT SECTION »

#### COST ACCOUNTING

Comments by A. V. HARRIS, C.A., R.I.A.

#### QUESTION 2 (17 marks)

Three different kinds of articles are manufactured by the Company A Ltd.

Its estimated costs are:

	Material	Labor	Mfg. Expenses	Total
Article 1 .....	\$ 6	\$ 3	\$ 3	\$12.00
Article 2 .....	10	2	5	17.00
Article 3 .....	3	4	4	11.00

Three Work-in-Process Accounts are kept: One for Material, one for Direct Labor and one for Manufacturing Expenses.

Inventories at the beginning of the period, January 1:

Raw Materials—\$3,500.00.

Finished Goods:

30 articles 1 at \$13 each.

11 articles 2 at \$16 each.

31 articles 3 at \$10 each.

During the month of January, the finished production was:

150 articles 1

180 articles 2

200 articles 3



## STUDENT SECTION

The transaction of the month:

Purchases of Raw Material, \$4,100.

Payment of Direct Labour, \$2,300; Indirect Labour, \$400.

Material issued for repairs, \$400.

Manufacturing expenses other than those already mentioned, \$1,200.

On January 31, Raw Material Inventory was \$3,100.

Sales:

Article 1 170 at \$18 each.

Article 2 150 at \$21 each.

Article 3 200 at \$14 each.

Inventory remaining in Work-in-process at the end of January:

	Article 1	Article 2	Article 3
	Units 10	Units 41	Units 31
Material	100%	100%	100%
Labour	1/2	1/2	12/31
Mfg. Expense	1/2	1/2	12/31

### REQUIRED:

All journal entries to record transactions for the month. Any adjustments required in Work-in-Process accounts should be transferred to Profit and Loss.

## ADVANCED COST ACCOUNTING, 1949

### SOLUTION TO QUESTION 2

Journal Entries	Dr.	Cr.
Stores	4100.00	
Accounts Payable		4100.00
To record purchases		
Direct Labour	2300.00	
Manufacturing Expense (Indirect Labour)	400.00	
Accounts Payable		2700.00
To record labour for the month		
Manufacturing Expenses	400.00	
Stores		400.00
To transfer material used for repairs		
Material in Process	4100.00	
Stores		4100.00
Material used in production		
Labour in Process	2300.00	
Direct Labour		2300.00
Direct labour used in production		
Manufacturing Expenses	1200.00	
Accounts Payable		1200.00
To record other manufacturing expenses		
Manufacturing Expense in Process	2000.00	
Manufacturing Expense		2000.00
To apply actual manufacturing expenses		

# COST AND MANAGEMENT

	Dr.	Cr.
Finished Goods .....	7060.00	
Material in Process .....		3300.00
Labour in Process .....		1610.00
Manufacturing Expense in Process .....		2150.00

To transfer estimated cost of finished production, as follows:

	Material	Labour	Mfg. Exp.
Article No. 1—150 .....	900.00	450.00	450.00
Article No. 2—180 .....	1800.00	360.00	900.00
Article No. 3—200 .....	600.00	800.00	800.00
	<u>3300.00</u>	<u>1610.00</u>	<u>2150.00</u>

Cost of Goods Sold .....	6778.00
--------------------------	---------

Finished Goods ..... 6778.00

To transfer cost of sales, as follows:

Article No. 1— 30×\$13 .....	390.00	
140×\$12 .....	1680.00	2070.00

170

Article No. 2— 11×\$16 .....	176.00	
139×\$17 .....	2363.00	2539.00

Article No. 3— 31×\$10 .....	310.00	
169×\$11 .....	1859.00	2169.00

\$6778.00

Accounts Receivable .....	9010.00
---------------------------	---------

Sales ..... 9010.00

Sales for the period as follows:

Article No. 1—170×\$18 .....	3060.00
Article No. 2—150×\$21 .....	3150.00
Article No. 3—200×\$14 .....	2800.00
	<u>9010.00</u>

Dr.

Cr.

Inventory of Work in Process .....	832.50
------------------------------------	--------

    Material in Process ..... 563.00

    Labour in Process ..... 104.00

    Manufacturing Expense in Process ..... 165.50

To transfer value of goods in process at 31st January, as follows:

	Material	Labour	Mfg. Exp.
Article No. 1 .....	60.00	15.00	15.00
Article No. 2 .....	410.00	41.00	102.50
Article No. 3 .....	93.00	48.00	48.00
	<u>563.00</u>	<u>104.00</u>	<u>165.50</u>

Profit and Loss .....	507.50
-----------------------	--------

Manufacturing Expense in Process .....	315.50
--	--------

    Material in Process ..... 237.00

    Labour in Process ..... 586.00

To transfer under or over absorbed amounts.

## STUDENT SECTION

### COMMENTS:

This problem was answered well by most students. Several candidates did not remember that there were two prices in finished goods stock—which resulted in a minor difference in the cost of goods sold calculation.

### QUESTION 3 (16 marks)

The retail Company Limited submits to you the following data, with the request that you prepare:

(1) Budget Profit and Loss Statements for each of the three months of January, February and March, 1949.

(2) A Balance Sheet, projected at the end of March, 1949.

Budgeted	January	February	March
General Expenses	\$ 2,000	\$ 2,000	\$ 1,800
Selling Expenses		200	200
Purchases	4,000	22,000	26,000
Sales	12,000	48,000	48,000

40% of sales is expected to be the Gross Profit. In addition to the expenses mentioned above, provision is to be made for the following:

Advertising	\$100.00 per month
Reserve for Doubtful Accounts	1% of sales
Reserve for Depreciation of Equipment	12% per annum

The balance of Accounts Receivable on 31st March, 1949, is estimated to be one-third the sales of February and 100% of sales of March.

The balance of Accounts Payable at 31st March, 1949, is expected to be the purchases of March.

A commission of 25% of sales will be granted to salesmen.

On March 31st, the commission on sales is prepaid to the amount of \$3,000.

The Post-closing Trial Balance at 31st December, 1948, was the following:

Banks, \$15,200; Accounts Receivable \$33,000.  
 Reserve for doubtful accounts \$3,000; Merchandise Inventory, \$36,000.  
 Prepaid Commission on Sales, \$13,000; Equipment, \$3,000.  
 Reserve for depreciation, \$1,000; Accounts Payable, \$35,000.  
 Capital Stock \$30,000; Surplus \$31,200.

### SOLUTION TO QUESTION 3

The Retail Company Limited

Budget of Profit and Loss by Months  
 For the Three Months to 31st March, 1949

	January	February	March	Total
Sales	\$12,000	\$48,000	\$48,000	\$108,000
Cost of Sales				
Opening Inventory				
Finished Goods	36,000	32,800	26,000	36,000
Add: Purchases	4,000	22,000	26,000	52,000
	40,000	54,800	52,000	88,000

# COST AND MANAGEMENT

Less: Closing Inventory	32,800	26,000	23,200	23,200
Cost of Sales	7,200	28,800	28,800	64,800
Gross Profit (40%)	4,800	19,200	19,200	43,200
Selling Expenses and Administration Expense				
General Selling Expense		200	200	400
Advertising	100	100	100	300
Commissions	3,000	12,000	12,000	27,000
General Expense	2,000	2,000	1,800	5,800
Provision for Bad Accts.	120	480	480	1,080
Provision for				
Depreciation of Equipment	30	30	30	90
Total Expenses	5,250	14,810	14,610	34,670
Net Profit (Loss*)	450*	4,390	4,590	8,530

## The Retail Company Limited Projected Balance Sheet as at 31st March, 1949

Assets		Liabilities		
Current		Current		
Cash	8,000	Accounts Payable	26,000	
Discounts Receivable	64,000	Provision for Advt.	300	26,300
Inventory	23,200			
	95,200			
Fixed—		Reserves		
Equipment	3,000	Res. for Bad Debts	4,080	
Prepaid Charges—		Res. for Depr.	1,909	5,170
Commissions	3,000			
		Capital Stock		30,000
		Surplus		
		Balance, 1st January	31,200	
		Profit for 3 months	8,530	39,730
	101,200			101,200

### COMMENTS:

While this problem on budget preparation had no more than the usual calculations to determine the final balance of the bank, accounts receivable and accounts payable, the candidates, in many cases, did not make the proper calculations. Marks for this type of problem were lower than anticipated by the examiner.

